

CLAIMS:

- 1 1. A method of providing and authenticating secure data over a network,
2 comprising:
 - 3 establishing a first secure connection from a user device to a first server;
 - 4 encrypting an enrollment request with a first authentication key, and thereafter
5 sending the encrypted enrollment request to a host application;
 - 6 encrypting an enrollment applet, a public key and signed data with the first
7 authentication key and thereafter returning the encrypted enrollment applet, public key and
8 signed data from the host application to the first server;
 - 9 decrypting the enrollment applet and sending the enrollment applet from the first
10 server to the user device using the first secure connection;
 - 11 establishing a second secure connection from the user device to a second server;
 - 12 encrypting the secure data with the public key using the enrollment applet;
 - 13 linking the signed data and the encrypted secure data and thereafter sending the linked
14 data to the second server;
 - 15 encrypting the linked data with a second authentication key and sending the encrypted
16 linked data to the host application;
 - 17 verifying the signed data and thereafter creating authentication data;
 - 18 encrypting the authentication data and the secure data and sending the encrypted
19 authentication data and secure data to the second server;
 - 20 storing the encrypted authentication data and the secure data.
- 1 2. The method of claim 1, wherein the signed data comprises a serial number and
2 an account number.
- 1 3. The method of claim 1, further comprising exchanging the first authentication key
2 between the first server and the host application and exchanging the second authentication key
3 between the second server and the host application.
- 1 4. The method of claim 1, wherein storing the encrypted authentication data and the
2 secure data includes storing at least a portion of the authentication data and the secure data in the
3 enrollment applet.
- 1 5. The method of claim 1, wherein storing the encrypted authentication data and the
2 secure data includes storing at least a portion of the authentication data and the secure data in a
3 mobile storage medium.

1 6. The method of claim 5, wherein the mobile storage medium is a smart card device
2 which may be used to access an account from at least one remote location.

1 7. A method of providing and authenticating secret data over a network, the
2 network comprising a user device, a first server, a second server and a host application,
3 comprising: establishing a first secure connection between the user device and the first server
4 in response to an enrollment request from a user;

5 sending encrypted enrollment information from the host application to the first server;
6 decrypting the enrollment information at the first server;

7 sending an enrollment applet and a unique identifier from the first server to the user
8 device, the unique identifier identifies the user device;

9 establishing a second secure connection between the user device and the second server;
10 encrypting an access code using the customer applet;

11 linking the encrypted access code with the unique identifier and thereafter sending the
12 linked encrypted access code and the unique identifier to the second server;

13 encrypting the linked data at the second server and thereafter sending the encrypted
14 linked data to the host application;

15 verifying the unique identifier at the host application and thereafter creating
16 authentication data;

17 encrypting the authentication data with the access code;

18 sending the encrypted authentication data and access code from the host application to
19 the second server;

20 sending the encrypted authentication data and access code from the second server to
21 the customer applet using the second secure connection; and

22 storing the encrypted authentication data and access code in the customer applet.

1 8. The method of claim 7, wherein the access code is a personal identification
2 number (PIN).

1 9. The method of claim 7, wherein the access code is a password.

1 10. The method of claim 7, wherein storing the encrypted authentication data and
2 access code includes storing at least a portion of the encrypted authentication data and the
3 access code in the customer applet.

1 11. The method of claim 10, further comprising:

2 encrypting and sending an enrollment applet, a public key, a serial number and an
3 account number from the host to the first server; and
4 decrypting the enrollment applet, a public key, a serial number and an account number
5 at the first server.

1 12. The method of claim 7, wherein storing the encrypted authentication data and
2 access code includes storing at least a portion of the encrypted authentication data and the
3 access code on a mobile storage medium.

1 13. The method of claim 12, wherein the mobile storage medium is a smart card
2 device which may be used to access an account from at least one remote location.

1 14. A method of providing and authenticating an access code, comprising:
2 establishing a first secure connection from a user to a first server;
3 sending an enrollment request from the user to the first server using the first secure
4 connection;

5 encrypting the enrollment request at the first server and thereafter sending the
6 encrypted enrollment request to a host application;

7 sending encrypted enrollment information from the host application to the first server,
8 the enrollment information comprising a customer applet, a public key, a serial number and
9 an account number, wherein the information is used for enrolling and selecting the access
10 code by the user;

11 decrypting the customer applet at the first server and thereafter sending the customer
12 applet over the first secure connection to the user;

13 establishing a second secure connection from the user to a second server using the
14 customer applet;

15 selecting the access code by;

16 encrypting the access code with the public key using the customer applet;

17 linking the encrypted access code with the account number and the serial number
18 from the first server and thereafter sending the linked data to the second server;

19 encrypting the linked data at the second server and thereafter sending the encrypted
20 linked data to the host application;

21 verifying the account number and the serial number at the host application and
22 thereafter creating authentication data;

23 encrypting the authentication data and the access code;

24 sending the encrypted authentication data and access code from the host application to
25 the second server;

26 sending the encrypted authentication data and access code from the second server to
27 the customer applet using the second secure connection; and

28 storing the encrypted authentication data and access code.

1 15. The method of claim 14, wherein storing the encrypted authentication data and
2 access code includes storing at least a portion of the authentication data and the access code in
3 the customer applet.

1 16. The method of claim 14, wherein storing the encrypted authentication data and
2 access code includes storing at least a portion of the authentication data and the access code on a
3 mobile storage medium.

1 17. The method of claim 16, wherein the mobile storage medium is a smart card
2 device which may be used to access an account from at least one remote location.

1 18. A system for providing and authenticating an access code over a network,
2 comprising:

3 a user device;

4 a first server, coupled to the user device, for encrypting and decrypting
5 enrollment information, the information comprising an enrollment request and an enrollment
6 applet;

7 a second server, coupled to the user device, for encrypting and decrypting
8 authorization information, the authorization information comprising an access code and
9 authentication data;

10 a host application, coupled to the first server and the second server, for verifying and
11 transmitting authorization information and enrollment information;

12 a first secure connection for coupling the first server and the user device;

13 a second secure connection for coupling the second server and the user device; and

14 a customer applet, transmitted from the host application to the user device over the
15 first secure connection, for allowing a user to enter enrollment information comprising an
16 access code.

1 19. The system of claim 18, wherein the first and second secure connections are
2 SSL connections.

1 20. The system of claim 18, wherein the customer applet establishes the second
2 secure connection in response to a user entering enrollment information.

1 21. The system of claim 18, further comprising a plurality of hardware service
2 modules, one each coupled to the first server, the second server and the host application, for
3 performing cryptography.

1 22. The system of claim 18, wherein the user device comprises a personal digital
2 assistant.

1 23. The system of claim 18, wherein the user device comprises a
2 personal computer.

1 24. The system of claim 18, wherein at least a portion of the customer applet is stored
2 on a smart card device, wherein the smart card device may be used to access an account from at
3 least one remote location.

1 25. The system of claim 18, wherein the access code is a personal identification
2 number (PIN).

1 26. The system of claim 18, wherein the access code is a password.